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2/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0138270

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MORPHOLOGY OF THE POLYMORPHIC TRANSFORMATION IN KNO SUB3 WAS STUDIED. THE HIGH TEMP. BETA PHASE KNO SUB3 CRYSTALS GROW RHYTHMICALLY FROM THE LOW TEMP. ALPHA PHASE; SUCH A GROWTH PROCESS INVOLVES TRANSITION OF THE ALPHA TO THE BETA PHASE BY DISCRETE, COMPLETELY IDENTICAL LAMELLAS. THE D. OF ALPHA AND BETA CRYSTALS DIFFERS CONSIDERABLY, P SUBALPHA MINUS P SUBBETA EQUALS 0.117 G-CM PRIME3. THE BETA CRYSTALS NUCLEATE INSIDE THE ALPHA CRYSTALS AND GROW AT A HIGH RATE ALONG (100) DIRECTION. BECAUSE THE TRANSITION OCCURS ONLY AT T GREATER THAN OR EQUALS TO T SUBO (127DEGREES), THE CONTACT BETWEEN LAMELLAS IS NOT BROKEN, NEW NUCLEI OF BETA PHASE ARE FORMED, AND GROWTH OF BETA CRYSTALS IS CONTINUED. FACILITY: INST. FIZ., BAKU, USSR.

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USSR

NASIROVA, T. I. and SKOROKHOD, A. V.

"The Distribution of Certain Functionals of a Process with Semi-Independent Increments"

Ukr. Mat. Zh. [Ukranian Mathematics Journal], 1973, Vol 25, No 3, pp 400-405 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V86)

Translation: Random processes constructed as follows are studied. Suppose $(\xi_k; \eta_k)$, $k = 1, 2, \ldots$, is a sequence of independent pairs of random quantities, where $\xi_k > 0$, ξ_k and η_k are also independent. assume $\zeta(t) = \sum_{i=1}^{k-1} \eta_i$, if $\sum_{i=1}^{k-1} \xi_i \leqslant t < \sum_{i=1}^{k} \xi_i \left(\sum_{i=1}^{0} = 0\right)$. For process $\zeta(t)$, the distribution of the maximum is found over a finite interval, as well as the joint distribution of the values and moment of the first passage through a fixed positive level. Author's view

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UDC: 519.217

USSR

DZHAFAROV, K. M., NASIROVA, T. I., SKOROKHOD, A. V.

"On the Limit of a Certain Process With Semi-Independent Increments"

Teoriya veroyatnostey i mat. stat. Mezhved. nauch. sb. (Probability Theory and Mathematical Statistics. Interdepartmental Scientific Collection), 1971, vyp. 5, pp 51-56 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V106)

Translation: Let $\{\xi_k^{(n)}\}$ be a sequence of series of independent positive identically distributed random quantities, and let $\{\eta_k^{(n)}\}$ be a sequence of series of independent symmetric identically distributed random quantities. Let us construct the random process

$$\chi_n(t) = \sum_{k=1}^{m} \eta_k^{(n)}, \text{ if } \sum_{k=1}^{m} \xi_k^{(n)} < t \leq \sum_{k=1}^{m+1} \xi_k^{(n)}.$$

The following theorem is proved: If finite-dimensional distributions

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USSR

DZHAFAROV, K. M. et al., Teoriya vercyatnostey i mat. stat. Mezhved. nauch. sb., 1971, vyp. 5, pp 51-56

of processes $\chi_n(t)$ converge to finite-dimensional distributions of the vector process $\chi(t)$, then there exists a homogeneous process $\eta(t)$ and a generalized process $\xi(t)$ on $[R_+]$ such that the finite-dimensional distributions of processes $\chi(t)$ and $\eta\xi^{-1}(t)$ coincide where $\xi^{-1}(t) = s$ if s is a minimum solution of the inequality $\xi(s) \leq t < \xi(s+0)$. Authors' abstract.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

Mechanical Properties

UDC: 539.4

USSR

GINDIN, I. A., LAPIAZHVILI, E. S., NASKIDASHVILI, I. A., NEKLYUDOV, I. M., Tbilisi, Khar'kov

"Influence of Neutron Bombardment on Mechanical Properties and Effect of Programmed Hardening of Titanium"

Kiev, Problemy Prochnosti, No 8, Aug 73, pp 49-52.

Abstract: Results are presented from studies of the influence of neutron bombardment by integral doses of $1.2 \cdot 10^{18}$ n/cm^2 and $3.2 \cdot 10^{18}$ n/cm^2 at 130° C on the mechanical properties of polycrystalline titanium and the effect of additional hardening following annealing without load and under smoothly increasing load in the macroelastic area of deformation at 20 and 200° C. It is shown that bombardment increases the yield point by approximately 40%, while bombardment with subsequent annealing under smoothly increasing load increases the yield point of titanium to almost double its original value. VT-1 titanium was used in the study.

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UNCLASSIFIED PROCESSING DATE--27NOV70

1/2 028

TITLE--RADIATION GROWTH OF URANIUM DURING LOW BURN UPS -U-

AUTHOR-(04)-KONOBEYEVSKIY, S.T., PANTELEYEV, L.D., LEVITSKIY, B.M.,
NASKIDASHVILI, I.A.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970. 28(4), 326-32

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--URANIUM, IRRADIATION, CRYSTAL LATTICE DEFORMATION, LATTICE DEFECT

CONTROL MARKING--NO RESTRICTIONS

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UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 028

CIRC ACCESSION NO--AP0137644

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RADIATION GROWTH OF U AT MINUS 150DEGREES AND 160DEGREES WAS STUDIED IN THE 1ST STAGES OF IRRADN., US BEING THERMALLY PRETREATED AT VARIOUS TEMPS. 20-620DEGREES. THE INITIAL STAGE OF GROWTH WAS THE RESULT OF THE FORMATION OF INDIVIDUAL DEFECTS CAUSING THE ANISOTROPIC DEFORMATION OF THE ALPHA U LATTICE IN THE TOTAL VOL. OF THE METAL, NOT ONLY IN THE NEIGHBORHOOD OF THE THERMAL PEAKS. OWING TO VACANCIES FORMED DURING THE KNOCK OUT OF ATOMS BY FISSION FRAGMENTS, THE CONTRACTION INSIDE THE ZIGZAG LIKE LAYERS OF ALPHA U LATTICE TOOK PLACE AND THE DISPLACED ATOMS WERE SITUATED IN POSITIONS WITH THE COORDINATION NO. OF 5, PYRAMIDAL DEFECTS, OR 4 OR 6, OCTAHEDRAL DEFECTS; VOL. AND AXIAL DEFORMATIONS CAUSED BY THE FORMER DEFECTS EXCEEDED MANY TIMES THOSE ARISING WHEN OCTAHEDRAL DEFECTS WERE FORMED. IN THE PRESENCE OF LATTICE IMPERFECTIONS, THE PYRAMIDAL DEFECTS WERE FORMED PREDOMINANTLY. IN THE 1ST STAGE OF GROWTH, PARTIAL RECOMBINATION OF DEFECTS TOOK PLACE WHICH REDUCED THEIR AMT. IN U DEFORMED AT LOW TEMPS., DISPLACED ATOMS WERE PREVENTED FROM RECOMBINING OWING TO THEIR ADSORPTION ON VARIOUS LATTICE IMPERFECTIONS, WHICH EXPLAINED THE HIGH RATE OF GROWTH IN THESE SPECIMENS. WHEN THE LOCAL CONCN. OF DEFECTS REACHED A SUFFICIENTLY HIGH VALUE, THE FORMATION OF THEIR COMPLEXES STARTED OWING TO THE FIELD OF TENSION. THE STAGE WHEN AN EQUIL. BETWEEN THE NO. OF FORMED INDIVIDUAL DEFECTS AND THE NO. OF DEFECTS FORMING THEIR COMPLEXES WAS REACHED CORRESPONDED TO THE LINEAR COURSE OF THE RADIATION GROWTH CURVE.

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USSR UDC 539.4

GINDIN, A. I., LAPIYASHVILI, E. S., NASKIDASHVILI, I. A., NEKLYUDOV, I. M., (Khar'kov, Tbilisi)

"The Bauschinger Effect in Annealed and Irradiated Titanium"

Kiev, Problemy Prochnosti, No 8, 1972, pp 118-120.

Abstract: Results are presented from studies of the influence of the degree of deformation hardening on Bauschinger effect of annealed specimens of titanium following neutron bombardment in a low-temperature channel in a reactor with programmed loading following bombardment. It is demonstrated that irradiation and subsequent programmed loading help to increase the deformation resistance of titanium specimens to both unidirectional and sign-changing loads.

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USSR

UDC 661.143.004.14

SOKOLOV, V. A., STYROV, V. V., NASLEDNIKOV, YU. M., KHOMUZHIY, V. D., LUBYANSKIY, G. A., and URUSOV, B. G.

"On the Feasibility of Employing Radical Recombination Luminescence in the Physicochemical Control of Phosphor Crystals"

Sb. nauch. tr. VNII lyuminoforov i osobo chist. veshchestv (Collection of Scientific Works of All-Union Scientific Research Institute for Phosphors and Ultrapure Substances), 1971, vyp. 6, pp 88-94 (English summary) (from RZh-Khimiya, No 16, 25 Aug 72, Abstract No 16L135 from summary)

Translation: The article suggests a new method of physicochemical control of the synthesis conditions and the quality of phosphor crystals, based on the use of the phenomenon of radical recombination luminescence (RRL). RRL with high sensitivity detects small concentrations of impurities in a phosphor, polymorphic transformations, decay of solid solutions, etc. Some examples are examined.

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USSR

UDC 621.315.592

GUSLIKOV, V. M., YEMEL'YANENKO, O. V., NASLEDOV, D. N., NEDEOGLO, D. D., and TIMCHENKO, I. N.

"Effect of a Magnetic Field on the Ionization Energy of Small Donor Impurities in GaAs and InP"

Leningrad, Fizika i Tekhnika Poluprovodnikov, No 9, Sep 73, pp 1785-1789

Abstract: An analysis is made of the ionization energy of small donors as a function of the magnetic field intensity in the area of fairly weak fields, using as specimens pure GaAs and InP crystals. As described in earlier articles published in the journal noted above (V. F. Dvoryankin et al, 5, 1971, p 1882), experiments along this line have already been conducted. In the present paper, the analysis noted above is made by considering the Hall coefficient as a function of the temperature under various magnetic field intensities. A table of the parameters for n-GaAs and n-InP, together with curves of the Hall coefficient, as functions of the temperature for the various types of specimen listed in the table is given. Curves are also plotted for the Hall coefficient and the resistivity as functions of the magnetic field intensity in GaAs at 4.5° K and for the change in ionization energy of small donor impurities as a function of the magnetic field intensity. In this last curve, the theoretical results are compared with the data found by the authors of the present article and others.

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USSR UDC: 621.315.592

GASANLI, Sh. M., YEMEL'YANENKO, O. V., NASLEDOV, D. N., and TALALAKIN, G. N.

"Peculiarities of Current-Carrier Migration in p-GaAs Crystals With Deep Impurity Levels"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 2053-2056

Abstract: The results are given of experiments performed with p-type GaAs crystals doped with Mn, Co, Ni, and Cr. In addition to the Hall effect and the electrical conductivity, the change in resistance of the specimens in a transverse magnetic field was measured. It was found, in this brief communication, that in crystals with Mn and Co, the carrier migration occurred in the usual way. In crystals with Ni and Cr, and to some extent in strongly compensated crystals with Co, the migration shows peculiar variations. A table of the specimens and their characteristics at temperatures of 100-500° K is given. It is also found that there is a sharp drop in mobility at low temperatures in crystals of the $A^{III}B^{V}$ type, containing deep levels or impurities tending to form clusters. The authors note that the observed migration effects are not connected with surface conductivity influences.
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USSR

MIKHAYLOVA, M. P., NASLEDOV, D. N., SLOBODCHIKOV, S. V., KHAMROKULOV, M., Physicotechnical Institute imeni A. F. Ioffe, Academy of Sciences of the USSR

"Heating of Electrons by Light in n-InAs"

Leningrad, Fizika Tverdogo Tela, Vol 15, No 2, Feb 73, pp 390-394

Abstract: The photomagnetic effect and photoconductivity are investigated in degenerate specimens of n-InAs with free carrier concentration of $2 \cdot 10^{16}$–$8 \cdot 10^{17}$ cm^{-3} in the temperature range of 5-77°K. Evaluations are made of the characteristic times of relaxation of electrons with respect to energy, and the role of the principal mechanisms of energy loss by the heated carriers is analyzed in different temperature intervals. It is shown that the behavior of the photomagnetic effect and photoconductivity in degenerate n-InAs at low temperatures can be satisfactorily explained by the theory of photoelectric effects for the case of electron heating by light under conditions of strong electron-electron interaction. In conclusion, the authors thank I. N. Yassiyevich for her constructive criticism.

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USSR

UDC 621.382.2

GUTKIN, A. A., NASLEDOV, D. N., FARADZHEV, F. E.

"Polarization Effects in the Presence of Electroabsorption in GaAs p-si-n-Structures"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 393-396

Abstract: The polarization dependence of electroabsorption in gallium arsenide was investigated in the direction of propagation of light both perpendicular to an electric field and parallel to it. The polarization effects detected in the latter case (when the angle between the polarization vector and the electric field is constant) are wholly connected with the anisotropy of the energy bands. The measurements were taken near the edge of the primary absorption band ($E_g - 0.04 \leq \hbar\omega \leq E_g - 0.15$ electron volts) in fields of $\sim(1-3)\cdot10^4$ volt.cm^{-1} at temperatures of ~100 and 300° K. The variations of the absorption in a strong electric field were investigated using GaAs p-si-n-structures obtained by successive diffusion of chromium and zinc into unoriented gallium arsenide plates with an electron concentration of $\sim10^{17}$ cm^{-3}. Figures are presented showing the ratio of the transmission variations for the direction of the electric vector of the light wave parallel to the electric field in the sample and perpendicular to it, the dependence of $\Delta I/I_0$ on the angle between the plane of

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GUTKIN, A. A., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 393-396

polarization of the light and an arbitrarily selected direction in the crystal on propagation of the light along the electric field into a high-resistance layer (that is, with mutual perpendicularity of the electric vector of the light wave and the field). In the latter case, there is a position of the polarization plane for which the electroabsorption is minimal. This effect was observed in all identically cut samples at temperatures of ~100 and 300° K, and its cause is interpreted as anisotropy of the band structure of the gallium arsenide.

The dependence of the degree of polarization of the electroabsorption on $\hbar\omega$ is determined by the variation of the relative contribution to the electroabsorption of light and heavy holes giving a different degree of polarization [L. V. Keldysh, et al., FTP, No 3, 1042, 1969]. This dependence ceases to be observed if the variation of the absorption coefficients with the participation of light and heavy holes with photon energy varies in the same manner. It is shown in the investigated models that this takes place for $\hbar\omega$ where the absorption edge in the field for light holes becomes similar to the edge in the absence of the field but shifted toward the lower photon energies.

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USSR

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DMITRIYEV, A. G., NASLEDOV, D. N., TSARENKOV, B. V.

"Inverse Branch of the I-U-Characteristic and Breakdown of the p-n-Structures in the Presence of Incomplete Ionization of the Impurity Centers (in the Example of GaAs p-n-Structures Alloyed with Si)"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 345-352

Abstract: Results are presented from a study of the inverse branch of the I-U-characteristic and electric breakdown of GaAs p-n-structures, the n-region of which is alloyed with fine donors (tellurium and silicon), and the p-region contains deep acceptor centers caused by introduction of Si atoms. The measurements were performed in the temperature range of 77-350° K. From analyzing the dependence of the photocurrent multiplication factor on the voltage and the dependence of the current on the voltage it was established that for all temperatures in the 77-350° K range the mechanism of electric breakdown of the p-n-junction is impact ionization.

The I-U-characteristic of the p-n-structure at voltages of $U > U_B$ (U_B is the breakdown voltage of the p-n-junction) has a different form for different temperature intervals: for temperatures near room temperature when a significant part of the acceptor centers of silicon in the p-region are ionized,

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USSR

DMITRIYEV, A. G., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 345-352

the I-U-characteristic is linear ($I = U-U_B/R_s$ where R_s is the residual resistance of the p-n-structure) and at temperatures close to the temperature of liquid nitrogen when a significant part of the acceptor centers of the silicon are not ionized, the I-U-characteristic is exponential ($I \sim \exp \chi(U - U_B)^{1/2}$ where χ is the parameter of the p-n-structure).

The exponential dependence of the current on voltage after breakdown of the p-n-junction was caused by an increase in the hole concentration in the p-region as a result of ionization of the acceptor centers of the silicon with an increase in intensity of the electric field in the p-region of the p-n-structure (thermofield ionization of the impurity atoms -- the Frenkel effect).

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UDC 621.315.592

USSR

IBRAGIMOV, V.YU., KOLCHANOVA, N.M., NASLEDOV, D.N., TALALAKIN, G.N.

"Special Feature Of Negative Photoconduction In Gallium Arsenide Crystals"

Fizika i tekhnika poluprovodnikov, Vol 6, No 1, Jan 1972, pp 53-57

Abstract: The paper considers the negative photoconduction which was observed in high-resistance n-type gallium-arsenide crystals (with concentrations of electrons of 10^{10} — 10^{11} cm^{-3}) during illumination by "impurity" light. Negative photoconduction occurred with electrical fields exceeding 100 v/cm. In order to account for negative photoconduction the mechanism of recombination with the participation of centers with a negative barrier is drawn. The temperature, lux-ampere, and other dependences of the photoconductivity are explained on the basis of the proposed model of the structure of the forbidden band of the crystal. Physicotechnical Institute imeni A.F. Ioffe, AS, USSR, Leningrad. Received by editors 19 Feb 1971; in finished rewording 17 May 1971. 4 fig. 14 ref.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

UDC 621.315.592

DVORYANKIN, V. F., YEMEL'YANENKO, O. V., NASLEDOV, D. N., NEDEOGLO, D. D., TELEGIN, A. A.

"Electric Properties of n-GaAs Epitaxial Layers"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 5, No 10, October 1971, pp 1882-1887

Abstract: A study was made of the Hall effect, electrical conductivity and mobility in n-GaAs epitaxial layers in the temperature range of 2.5-295° K. The layers were obtained by the method of gas epitaxy on a semiinsulating substrate made of gallium arsenide alloyed with chronium, and they had an electron concentration of $5.7 \cdot 10^{14}$-$4.9 \cdot 10^{15}$ cm^{-3} and a current carrier mobility of 7,500-8,000 cm^2/volt-sec at T=295° K. The maximum mobility in the investigated layers was 104,000 cm^2/volt-sec. In the n-GaAs epitaxial layers with $n > 10^{15}$ cm^{-3} at low temperatures, scattering of the neutral atoms of the admixture becomes significant. From analysis of the temperature dependence of the Hall factor, the donor concentration N_d, the acceptor concentration N_a, and the ionization energy of the small donor admixture E_d were determined. In

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USSR

DVORYANKIN, V. F., et al., Fizika i Tekhnika Poluprovodnikov, Vol 5, No 10, October 1971, pp 1882-1887

layers with a concentration of $n \sim 10^{15}$ cm^{-3}, a deep admixture level was detected with $E_{deep} \approx 0.1$ electron volts. The concentration of the admixtures giving a deep admixture level decreases with an increase in the purity of the layers. In the purest test piece ($n = 5.7 \cdot 10^{14}$ cm^{-3}) no deep level was detected. The ionization energy of small donor admixtures decreases with an increase in their concentration as $N_d^{1/3}$.

In order to perform a more detailed analysis, measurements of E_d in crystals with a different degree of admixture compensation are necessary. In addition, the possible dependence of E_d on temperature must be considered and studied to which variations in the number of admixture ions in the crystal and variation of the screening effect of the current carriers can lead.

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1/2 045 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--INTERBAND RADIATIVE AND IMPACT RECOMBINATION IN INDIUM PHOSPHIDE -U-

AUTHOR-(03)-KOVALEVSKAYA, G.G., NASLEDOV, D.N., SLOBODCHIKOV, S.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(4), 780-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--REACTION MECHANISM, RADIATION EFFECT, THERMAL EFFECT, INDIUM COMPOUND, PHOSPHIDE, RADIATIVE RECOMBINATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1448 STEP NO--UR/0449/70/004/004/0780/0783

CIRC ACCESSION NO--AP0135119

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

2/2 045 UNCLASSIFIED

CIRC ACCESSION NO--AP0135119 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LIFETIME OF RADIATIVE AND IMPACT RECOMBINATION IN PURE OR DOPED INP WAS EVALUATED THEORETICALLY. THE RESP. LIFETIMES FOR PURE AND DOPED INP, TAU SUBN AND TAU SUBP FOR THE CASE OF RADIATIVE INTERBAND RECOMBINATION AT LOW EXCITATION LEVELS WERE PLOTTED VS. 1-TAU. THE MAX. LIFETIME OF PURE INP DISPLAYED AN ABRUPT, ALMOST EXPONENTIAL DECREASE AT ELEVATED TEMPS. DOPED INP DISPLAYED THE REVERSE BEHAVIOR. LIFETIME WAS SLIGHTLY AFFECTED BY TEMP., AND A NEGLIGIBLE DECREASE WAS CHECKED AT LOW TEMP., ATTRIBUTED TO CARRIER CONCN. ALTERATIONS. AT ELEVATED TEMPS., WHEN THE INTRINSIC CARRIER CONCN. TENDS TO N SUBO VALUES, (10 PRIME10-10 PRIME13 PER CM PRIME3), LIFETIMES OF PURE AND DOPED INP BECOME EQUAL. CURVES WERE PLOTTED ALSO FOR THE TEMP. DEPENDENCE OF IMPACT RECOMBINATION LIFETIME OF PURE AND DOPED INP. THE TEMP. DEPENDENCE WAS MORE ABRUPT THAN EXPONENTIAL, DUE TO THE KNOWN EFFECT OF THE BROADENING OF THE FORBIDDEN GAP. DOPING DECREASES LIFETIME SHARPLY. THE THEORETICALLY EVALUATED LIFETIME DATA IN BOTH CASES WERE COMPARED WITH PREVIOUSLY REPORTED EXPTL. FIGURES (KOVALEVSKAYA, 1968), IN AN EFFORT TO ANALYZE THE INTERBAND RECOMBINATION MECHANISM OF INP. IN THE ABSENCE OF DEFECTS, IN PURE INP CRYSTALS RADIATIVE RECOMBINATION FOLLOWS PREDOMINANTLY A RECOMBINATION AND ATTACHMENT MECHANISM AT ROOM TEMP, AND SLIGHTLY ABOVE.

FACILITY: FIZ.-TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

1/2 033 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--RECOMBINATION OF NONEQUILIBRIUM CURRENT CARRIERS IN P,INDIUM ANTIMONIDE AT TEMPERATURES BELOW 77DEGREESK -U-

AUTHOR-(04)-GUSEINOV, E.K., NASLEDOV, D.N., PENTSOV, A.V., POPOV, YU.G.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(1), 179-85

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--INDIUM ANTIMONIDE, ELECTRON RECOMBINATION, LOW TEMPERATURE EFFECT, TEMPERATURE DEPENDENCE, PHOTOCONDUCTIVITY, PHOTOMAGNETIC EFFECT, ELECTRON HOLE, ELECTRON TRAPPING, SEMICONDUCTOR CARRIER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1307 STEP NO--UR/0449/70/004/001/0179/0185

CIRC ACCESSION NO--AP0054641

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

2/2 033 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0054641

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TEMP. DEPENDENCES OF ELECTRON AND HOLE LIFETIMES IN P,TYPE INSB WERE INVESTIGATED AT SMALLER THAN 77DEGREESK BY MEASURING THE STATIONARY PHOTOCOND., THE PHOTOMAGNETIC EFFECT, AND THE PHOTOCOND. RELAXATION. WHEN THE HOLE CONCN. DECREASES, THE SHALLOW ACCEPTOR LEVEL, E SUBNU PLUS 9 TIMES 10 PRIME NEGATIVE3 EV, HAS A SUBSTANTIAL EFFECT ON RECOMBINATION. AT THE SAME TIME, THE HOLE LIFETIME DECREASES EXPONENTIALLY AND THE ELECTRON LIFETIME INCREASES BY NEARLY 1 ORDER. THE COEFF. OF ELECTRON TRAPPING IN THIS LEVEL IS 2 TIMES 10 PRIME NEGATIVE6 CM PRIME3-SEC. THE HEATING OF ELECTRONS BY LIGHT HAS AN ESSENTIAL EFFECT ON RECOMBINATION.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--LIFETIME OF IRON DOPED INDIUM ANTIMONIDE CURRENT CARRIERS -U-

AUTHOR-(03)-ILMENKOV, G.V., NASLEDOV, D.N., SMETANNIKOVA, YU.S.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 593-6

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--INDIUM ANTIMONIDE, IRON, CRYSTAL IMPURITY, ZONE REFINING, PHOTOCONDUCTIVITY--

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1721 STEP NO--UR/0449/70/004/003/0593/0596

CIRC ACCESSION NO--AP0120433

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

UNCLASSIFIED PROCESSING DATE--20NOV70

2/2 025

CIRC ACCESSION NO--AP0120453

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEMP. DEPENDENCE OF LIFETIME OF CURRENT CARRIERS OF FE DOPED INSB WAS EXAMD. IN THE RANGE 80-270DEGREESK. THE MATERIAL WAS PREPD. BY ZONE REFINING AND THE SAMPLES SHOWING NO HALL CONST. ANOMALIES WERE CHOSEN FOR MEASUREMENTS. LIFETIMES (TAU SUBN, TAU SUBP) WERE DETD. FROM TEMP. DEPENDENCES OF PHOTOMAGNETIC AND PHOTOCOND. CURRENTS. FE DOPED INSB WAS COMPARED WITH P TYPE NONDOPED MATERIAL AND NO APPRECIABLE DIFFERNCE IN THE TEMP. DEPENDENCES OF TAU SUBN AND TAU SUBP FOR THE BOTH KINDS OF SAMPLES WAS OBSD. IN REGION OF HIGH TEMPS. TAU SUBN AND T SUBP ARE LIMITED BY AUGER RECOMBINATION, AND IN THE 80-100DEGREESK REGION TAU SUBN IS LESS THAN TAU SUBP AS THE RESULT OF ELECTRON TRAPPING. THE EXISTENCE OF 2 LEVELS ACCOUNTING FOR RECOMBINATION WAS SUGGESTED, YIELDING THE FOLLOWING PARAMETERS: E SUB1 EQUALS 0.055, E SUB2 EQUALS 0.11 EV AT LIQ. N TEMP.; COEFFS. OF ELECTRON AND HOLE TRAPPING C SUBN1 EQUALS 3 TIMES 10 PRIME NEGATIVE10, C SUBN2 EQUALS 1 NEGATIVE5, C SUBP1 EQUALS 4 TIMES 10 PRIME NEGATIVE8 TIMES 10 PRIME NEGATIVE6, AND C SUBP2 EQUALS 1 TIMES 10 PRIME NEGATIVE8 CM PRIME NEGATIVE3 SEC PRIME NEGATIVE1. CONCNS. OF CENTERS GIVING RISE TO THE LEVELS RANGES (2-3) TIMES 10 PRIME14 CM PRIME NEGATIVE3; THE CENTERS WERE ASSIGNED TO STRUCTURAL DEFECTS AND NOT TO FE IMPURITIES.

FACILITY: FIZ.-TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

UNCLASSIFIED

1/2 026 PROCESSING DATE--23OCT70

TITLE--CALCULATION OF KINETIC COEFFICIENTS DURING THE SCATTERING OF CURRENT CARRIERS OF IONIZED IMPURITIES -U-

AUTHOR-(03)-BOLSHAKOV, L.P., NASLEDOV, D.N., FILIPCHENKO, A.S.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 789-92

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CARRIER SCATTERING, HALL MOBILITY, THERMAL EMF, FERMI LEVEL, SEMICONDUCTOR IMPURITY, KINETIC THEORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1969 STEP NO--UR/0181/70/012/003/0789/0792

CIRC ACCESSION NO--AP0105043
UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

2/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105043

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCES WERE COMPARED OF DIFFERENTIAL THERMAL EVF., HALL MOBILITY, AND THE TRANSVERSE NERNST ETTINGSHAUSEN COEFF. ON THE POSITION OF THE FERMI LEVEL, CALCO. WITH EXACT CONSIDERATION OF THE DEPENDENCE OF THE SCREENING PARAMETER ON THE ENERGY AND IN THE APPROXN. OF WEAK AND STRONG DEGENERACY. NEGLECTING THE ENERGY DEPENDENCE OF THE SCREENING PARAMETER CAN LEAD TO FORBIDDINGLY LARGE ERRORS IN THE CALCN. OF THE KINETIC COEFFS. IN THE CASE OF SCATTERING OF CURRENT CARRIERS ON IMPURITY IONS.

FACILITY: FIZ. TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

UDC: 621.315.592

GASANLI, Sh. M., YEMEL'YANENKO, O. V., LAGUNOVA, T. S., and NASLEDOV, D. N.

"The Nature of Negative Reluctance in Gallium Arsenide"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 2010-2014

Abstract: Experiments are described for investigating n-type GaAs crystals doped with such substances as donors, acceptors, without full compensation of the donors, amphoterics, ferromagnetics, to clarify the effect of the individual impurity on the negative reluctance of the specimen. The experimental results are compared with the results of current theory, and the effect of impurity compensation on the negative reluctance is considered. The following elements were used for the doping: S, Se, Sn, Si, Cu, Ni, and Cr; these were introduced into the GaAs specimens at concentrations of 0.001-0.5%, the electron concentration after doping was 10^{15}-10^{18} per cm^3, and the mobility was 1000-6000 $cm^2/V \cdot sec$ at room temperature. It was found that the negative reluctance is independent of the doping substance and is a function only of the concentration of small donor levels.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

/ 11595Og Properties of gallium arsenide doped with iron and nickel. Kolchanova, N. M.; Nasledova, D. N.; Talalakin, G. N. (Fiz.-Tekh. Inst. im. Ioffe, Leningrad, USSR). *Fiz. Tekh. Poluprov.* 1970, 4(1), 134–41 (Russ). The Hall effect, sp. resistance, photocond., and photomagnetic effect of GaAs single crystals doped with Fe and Ni to a concn. of 0.01–1.5 at. % were studied as functions of temp. at 80–300°. At low Fe and Ni contents (0.01%) a series of *n*-type specimens was obtained, with electron concns. of 10^{14}–10^{17}/cm³. The mobility of the electrons in these specimens was lower than in undoped crystals having the same electron concn. and grown under the same conditions. This is probably due to the presence of Fe and Ni atoms. In low-resistance *n*-type crystals doped with Ni, the electron mobility increases with decrease in temp. down to 80°. Thus, μ_{300} = 2400–3300, and μ_{80} = 3100–4150 cm²/V-sec. The hole concn. in crystals doped with Ni is 10^{14}–10^{16}/cm³, and their mobility is 100–200 cm²/V-sec, and falls on lowering the temp. The decrease in mobility indicates that in *p*-type crystals the ratio between the no. of Ni ions and atoms changes in such a way that the ions play the predominant part in current carrying. On lowering the temp., the equil. concn. of holes decreases, which indicates the presence of a deep impurity level, which may be associ. with the presence of Ni. The spectral distribution of the photocond. in *n*-type specimens contg. Ni and Fe, with a carrier concn. of 10^{16}–10^{17}/cm³, is no different from that of undoped crystals with

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REEL/FRAME
19831493

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

AP0054347

similar electron concns. The curve for the spectral distribution of the photocond. of crystals doped with Fe, with a concn. of approx. 10^{13}/cm^3, exhibits impurity cond. The luminescence spectra also exhibit a wide max. at 0.95 eV. In crystals contg. Ni, the photoluminescence spectra did not exhibit characteristic bands at 0.22 and 0.35 eV at room temp. and the temp. of liq. N. *p*-Type GaAs single crystals with impurity Fe atoms at a concn. $>10^{17}$/cm^3 showed little sensitivity to light at 200–300°K. *p*-Type GaAs single crystals contg. Fe atoms to a concn. $>10^{17}$/cm^3 show little sensitivity to light at high temps. (200–300°K), and no changes in the concn. of current carriers under the action of light were obsd. over this temp. range. The lifetimes of the holes and electrons in specimens contg. Ni are $\sim 10^{-6}$ and $\sim 10^{-8}$ sec, resp., at room temp.

F. N. Standen

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

1/2 035 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--IMPURITY PHOTOCONDUCTIVITY IN GALLIUM ARSENIDE CRYSTALS -U-

AUTHOR-(04)-KOLCHANOVA, N.M., MIRDZHALILOVA, M.A., NASLEDOV, D.N.,
IBRAGIMOV, V.YU.
COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 358-60

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHOTOCONDUCTIVITY, GALLIUM ARSENIDE SEMICONDUCTOR, SEMICONDUCTOR IMPURITY, OPTIC SPECTRUM, RADIATION INTENSITY, CHROMIUM, ELECTRON TRANSITION, TEMPERATURE DEPENDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0085 STEP NO--UR/0449/70/004/002/0358/0360

CIRC ACCESSION NO--AP0105171

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 035
CIRC ACCESSION NO--AP0105171
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IMPURITY PHOTOCOND., SIGMA SUBPH, OF CR DOPED GAAS WAS INVESTIGATED AT 77-300DEGREESK. THE MAX. AT 0.85 EV ON THE CURVE OF SPECTRAL DEPENDENCE OF SIGMA SUBPH BECOMES MORE DISTINCT AT LOWER TEMPS. THE POSITION OF THE MAX. CHANGES VERY SLIGHTLY WITH TEMP. THE CHARACTER OF THE DEPENDENCE OF SIGMA SUBPH ON INCIDENT PHOTON ENERGY AT 0.8-1.1 EV CANNOT BE EXPLAINED ONLY BY OPTICAL QUENCHING. IT IS POSSIBLE TAHT 2 STAGE PHONON ASSISTED TRANSITIONS TAKE PLACE IN THEPHOTOEXCITATION AT SIMILAR TO 0.85 EV, E.G. ELECTRON TRANSITIONS FROM THE CR ACCEPTOR LEVEL TO A SHALLOW DONOR LEVEL, WITH SUBSEQUENT THERMAL EXCITATION INTO THE CONDUCTION BAND.
FACILITY: FIZ. TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

1/2 018 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--PN JUNCTIONS IN GALLIUM ARSENIDE PREPARED BY SULFUR DIFFUSION -U-

AUTHOR-(03)-GUTKIN, A.A., NASLEDOV, D.N., SEDOV, V.E.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(1), 23-8

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SEMICONDUCTOR MATERIAL, GALLIUM ARSENIDE PN JUNCTION, SULFUR, PHYSICAL DIFFUSION, ZINC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1003 STEP NO--UR/0449/70/004/001/0023/0028

CIRC ACCESSION NO--AP0053923

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

2/2 018 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0053923

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. JUNCTIONS WERE PREPD. BY DIFFUSION OF S INTO P TYPE GAAS DOPED WITH ZN. THE PROPERTIES OF TYPICAL SPECIMENS OBTAINED AT (A) 800DEGREES FOR 1 HR AND (B) 1000DEGREES FOR 30 HR ARE INDICATED. UNDER THESE CONDITIONS, THE N TYPE LAYERS WERE APPROX. 0.5 AND 12 MU THICK, RESP. THE SPECTRA OF THE B SPECIMENS, PREVIOUSLY ETCHED TO DECREASE RECOMBINATION CLOSE TO THE SURFACE, EXHIBITED SHARP MAX. ASSOCD. WITH THE CONSIDERABLE THICKNESS OF THE FRONT LAYER. THE DIFFUSION LENGTH OF THE HOLES WAS APPROX. 2.5 MU. THE SPECTRA OF A SPECIMENS, IN WHICH THE N TYPE REGION WAS APPROX. 0.5 MU THICK, EXHIBITED A CONSIDERABLE DROP IN THE SHORT WAVELENGTH REGION, WHICH SHOWED SCARCELY ANY DECREASE AFTER REMOVING APPROX. 0.1 MU FROM THE SURFACE BY ETCHING. THIS INDICATES THE EXISTENCE OF A SURFACE LAYER CONTG. MINORITY CURRENT CARRIERS OF SHORT LIFETIME, THESE BEING EVIDENTLY ASSOCD. WITH A HIGH CONCN. OF DEFECTS. THE SPECTRAL CHARACTERISTICS OF A AND B SPECIMENS IN THE IMPURITY REGION WERE SIMILAR TO THOSE FOUND PREVIOUSLY (A. A. GUTKIN, ET AL., 1969), AND WERE ALMOST IDENTICAL. INVESTIGATION OF THE DIFFERENTIAL CAPACITANCE AS A FUNCTION OF VOLTAGE AT 393 AND 77DEGREESK AND 0.47-200 KHZ SHOWED THE SPECIMENS TO BE P-PO-N JUNCTIONS. THE PO LAYER IS FORMED AS A RESULT OF THE COMPENSATION OF SMALL DONORS BY DEEP ACCEPTORS, THE PRESENCE OF WHICH HAS BEEN OBSD. PREVIOUSLY.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

Acc. Nr: AP0051911 Ref. Code: UR0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 2, pp 26-28

ON THE INFLUENCE OF OVARIECTOMY, ADMINISTRATION OF OESTROGENS AND FEEDING WITH CHOLESTEROL ON THE FUNCTION OF THE THYROID AND ECG IN RABBITS

Ye. A. Loskutova, I. D. Nasledova, Ye. I. Nikolayev

Pavlov Institute of Physiology, Academy of Sciences of the USSR and Institute of Obstetrics and Gynecology, Academy of Medical Sciences of the USSR Leningrad

The authors studied the influence of cholesterol and oestradiol propionate on the content of cholesterol in the blood serum, function of the thyroid gland and ECG in 63 normal and ovariectomized female rabbits taken into experiment at the age of one month. Duration of experiments 6 months. Despite high content of cholesterol in the blood serum of ovariectomized rabbits which received cholesterol animals were resistant to development of aortic atherosclerosis. Significant decrease of absorption of I^{131} by the thyroid gland took place only after 2 to 6 months after ovariectomy. Great ECG changes were seen in female rabbits fed on cholesterol.

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19820394

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

UDC 629.12.004.4

KONSERVATSIYA SUDOV (The Inhibiting of Ships), by N. V. Nasonov and V.D. Sharapov, Leningrad "Sudostroyeniye" 1972, 152 pp, illus, bibliography, 2,300 copies printed

The book discusses the problem of inhibiting ships during completion of construction or adding-on construction, extended repairs and forced layover. The authors describe the reasons for the corrosion of ship installations, the factors which cause aging of various nonmetallic materials used in shipbuilding, and the modern methods of inhibiting ships. The discussion includes main and auxiliary mechanisms, electrical equipment, systems, equipment and radio. Practical recommendations are given for de-inhibiting.

The book is intended for a wide number of specialists in the ocean and river fleets and engineering-technical workers in shipbuilding and ship repair facilities.

The foreword explains that, while the word "konservatsiya" has until recently meant the application of preservative greases and varnishes to metallic surfaces to protect the surfaces from corrosion, it now is understood as the complex of measures directed toward the preservation of any equipment and whole ships during a period of inaction.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

KONSERVATSIYA SUDOV (The Inhibiting of Ships) by K.V.Masonov and V.D.Sharapov, Leningrad 1972, 152 pp

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR UDC: 517.514

NASONOVA, L. V.

"Imbedding Theorems for a Class of Functions with Mixed Norm"

Teoremy Vlozheniya i Ikh Prilozheniya [Imbedding Theorems and Their Applications -- Collection of Works], Moscow, Nauka Press, 1970, pp 167-179, (Translated from Referativnyy Zhurnal Matematika, No. 8, 1970, Abstract #8B74, by the author).

Translation: The class of functions $S^{(\overline{r})}_{p}\overline{H}A^{(\alpha)}_{\beta}(\upsilon_n)$ is studied in the metrics of the generalized Lebesgue space, for which a theorem of representation and imbedding theorem are proven.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

1/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EFFECT OF PHOTOSYNTHESIS ON CORN PRODUCTIVITY IN RELATION TO SOIL FERTILIZING -U-

AUTHOR-(04)-KNIGA, M.I., KNIGA, N.M., NASONOVA, M.G., SHEVCHENKO, I.M.

COUNTRY OF INFO--USSR

SOURCE--DOKL. VSES. AKAD. SEL'SKOKHOZ. NAUK 1970, (2), 11-13

DATE PUBLISHED--------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CEREAL CROP, MINERAL FERTILIZER, PHOTOSYNTHESIS, CHLOROPHYLL, BIOLOGIC PIGMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605009/D10 STEP NO--UR/3275/70/000/002/0011/0013

CIRC ACCESSION NO--AT0140085

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

2/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0140085

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INDEXES OF PHOTOSYNTHESIS WERE STUDIED AT VARIOUS STAGES OF GROWTH OF CORN IN RELATION TO THE FERTILIZER MODIFICATIONS APPLIED: N-P-K, N-P, N-K, AND P-K. THE LEVELS OF FERTILIZERS WERE N 90, P 25, AND K 20 KG PER HA. APPLICATION OF N-P-K, N-P, AND N-K INCREASED PRODUCTIVITY. IN THE STAGE OF COB FORMATION THE LEVEL OF DRY MATTER IN THE LEAVES REACHED 31PERCENT (N-P-K), WITH THE CONTENT OF CHLOROPHYLL INCREASING SIMULTANEOUSLY. N-P-K HAD THE BEST EFFECT ON THE AMT. OF LEAF CAROTENE.

FACILITY: KHAR'KOV. ZOOVET. INST., KHARKOV, USSR.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR UDC 591.1.15

PASHUTO, T. F., and NASONOVA, N. V.

"Effect of Glutamic Acid on Exchange of Gamma-Aminobutyric Acid at 40 Roentgens"

Vestn. Belorus. un-ta (Hearld of Belorussian University), 1973, Series 2, No 1, pp 37-40 (from RZh-Biologicheskaya Khimiya, No 11, Jun 73, Abstract No 11 F1417)

Translation: The effect of L-glutamic acid (I) on the activity of glutamate decarboxylase and gamma-aminobutyrate transaminase (II, III) in the brain tissue of white rats was investigated at a dosage of 40 roentgens as a function of the initial state of the adrenal cortex. Increased activity of ferments was noted after the administration of I before and after the removal of the cortex. It is concluded that the effect of I on II and III depends on the initial functional state of the hypophysial adrenal system.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ALTERATION OF OTORHINOLARYNGOLOGICAL ORGANS IN SYSTEMIC LUPUS ERYTHEMATOSUS AND SYSTEMIC SCLERODERMIA -U-

AUTHOR-(02)-MINCHIN, R.A., NASONOVA, V.A.

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 6, PP 129-134

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--OTOLARYNGOLOGY, SKIN DISEASE, EAR, RESPIRATORY SYSTEM, COLLAGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1923 STEP NO--UR/0497/70/048/006/0129/0134

CIRC ACCESSION NO--AP0129272

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

2/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0129272
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BASING UPON CLINICAL, ROENTGENOLOGICAL, AUDIOMETRIC AND ULTRASOUND INVESTIGATIONS PERFORMED IN 60 PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS AND IN 32 PATIENTS WITH SYSTEMIC SCLERODERMIA THE AUTHORS ARRIVED AT THE INFERENCE THAT IN THESE PROCESSES BECOME INVOLVED DIFFERENT REGIONS OF THE UPPER RESPIRATORY TRACT AND EAR. THE REFERRED TO PATHOLOGY IS BASED ON TROPHIC, NUERCMUSCULAR AND VASCULAR CHANGES PECULIAR TO COLLAGENOSES. CHRONIC FOCI OF INFECTION OF OTORHINOLARYNGOLOGICAL ORGANS AND PRIMARILY CHRONIC INFLAMMATION OF THE TONSILS ARE PRECEDED BOTH BY SYSTEMIC LUPUS ERYTHEMATOSUS AND SYSTEMIC SCLERODERMIA. FACILITY: MOSKOVSKIY NII UKHA, GORLA I NOSA I INSTITUT REVMATIZMA AMN SSSR, MOSKVA.

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

UDC 547.341.26'118.07

NIFANT'YEV, E. YE., NASONOVSKIY, I. S., LAKKORIN, B. N., SKOROVAROV, D. I., SHATALOV, V. V., Moscow State University imeni M. V. Lomonosov

"A Method of Making Phosphinates"

Moscow, Otkrytiya, Izobreteniya, Primyshlennyye Obraztsy, Tovarnyye Znaki, No 22, Aug 72, Author's Certificate No 345165 , Div C, filed 23 Nov 70, published 14 Jul 72, p 97

Translation: This Author's Certificate introduces: 1. A method of making phosphinates with the distinguishing feature that the process is simplified by reacting the sodium salt of phosphinic acid with an alkyl halides in an inert organic solvent such as methanol in the presence of heating with subsequent isolation of the goal product by conventional methods. 2, A modification of this procedure distinguished by the fact that heating is done to 130-135° C. 3. A modification of the method covered in points 1 and 2 distinguished by the fact that the process is carried out in the presence of a peroxide such as tert-butyl peroxide.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

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UDC 547.26'118

NIFANT'YEV, E. YE., NASONOVSKIY, I. S., KRYUCHKOV, A. A.

"Stereochemistry of the Dialkylamides of 1,3-Butylene Phosphorous Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 71-73

Abstract: The dialkylamides of 1,3-butylene phosphorous acid exist in the form of two isomers -- stable and labile [E. Ya. Nifant'yev, et al., ZhOKh, No 40, 1420, 1970]. The latter are easily converted to the former on storage (more rapidly with heating). On the basis of the stereochemical data for other similar derivatives [B. A. Arbuzov, etal., DAN SSSR, No 195, 835, 1970] it can be proposed that the difference between forms is determined by the spatial arrangement in them of the amido group with respect to the 6-member ring having chair configuration. The method of dipole moments is used to solve this problem in the example of the dimethyl and eithyl amides of 1,3-butylene phosphorous acid. The axial configuration of the amino group corresponds to the labile isomers of these compounds, and equatorial configuration, to the stabile isomers. The dipole moment of the P-N-bond was determined.

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USSR UDC 547.26'118

IVANOVA, N. L., ZAVALISHINA, A. I., FURSENKO, I. V., NASONOVSKIY, I. S., KONYAYEVA, I. P., KOMLEV, I. V., NIFANT'YEV, E. YE.

"Chromatography of Organic Compounds of Trivalent Phosphorus in a Thin Sorbent Layer. II"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 91-93

Abstract: Some acids of phosphorus and their esters can be identified by the method of thin layer chromatography, but the chromatograms of such substances are not always sufficiently clear and the method of thin layer chromatography was not successful heretofore for analysis of the amides and other important types of derivatives of the acids of trivalent phosphorus [E. Ye. Nifant'yev, ZhOKh, No 35, 1980, 1965]. Here, a more detailed study has been made of the conditions of thin-layer chromatography of some of the most useful types of substances of this class. As a rule, aluminum oxide of second degree Brockman activity was used as the sorbent, but silica gel, polyvinyl alcohol and chlorated polyethylenes were also investigated. They gave worse results. The presented method of thin layer chromatography proved to be useful for analysis of medium and acid phosphites, thiophosphites, amides of phosphoric acid and amidophosphites and esters of hypodiphosphoric acid.

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USSR

UDC 547.26'118

NIFANTIYEV, E. Ye., NASONOVSKIY, I. S., and BORISENKO, A. A., Moscow State University imeni M. V. Lomonosov

"Synthesis of Hydrogen 1,3-Alkylene Phosphites"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,368-2,371

Abstract: Study of the stereochemistry and reactivity of the acid 1,3-alkylene phosphites revealed a general lack of published data and a number of contradictions in data published. The authors synthesized and studied the following: 1) diethylamide of 2-methylamylene-2,4-phosphorous acid; 2) diethylamide of 2,4-dimethylamylene-2,4-phosphorous acid; 3) methylamylene-2,4 phosphite; 4) 2,4-dimethylamylene-2,4 phosphite; and 5) 1,3-propylene phosphite and 2,2-dimethyl-1,3-propylene phosphite. The possibility of synthesizing the stereoisomeric acid phosphites from acid 1,3-alkylene phosphites was demonstrated. Tables of physical constants found, paramagnetic resonance curves, and structural formulas are included.

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UDC 547.26'118

NIFANT'YEV, E. YE., NASONOVSKIY, I. S., and BORISENKO, A. A., Moscow State University imeni M. V. Lomonosov

"Stereoisomerism of 1.2-Propylene Phosphite"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, p 1876

Abstract: The authors found the phenomenon of stereoisomerism among acid five-membered alkylene phosphites. 1,2-Propylene phosphite, obtained in various ways, represents an approximately equal mixture of two stereoisomers alkylene phosphites, stereoisomeric five-membered phosphites possess very similar stability and do not interconvert under the action of acids, bases, or moderate heating. A study shows that stable 1,2-propylene phosphite is readily formed by hydrolysis of 1,2-propylene chlorophosphite with water.

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USSR

UDC 547.26'118

NIFANT'EV, E. E., NASONOVSKII, I. S., BORISENKO, A. A. Moscow State University imeni M. V. Lomonosov

"Stereoisomerism of Cyclic Acid Phosphites"

Leningrad, Zhurnal Obshchei Khimii, Vol 40, No 6, Jun 70, pp 1248-1251

Abstract: Pure crystalline 1,3-propylene phosphite is transformed into two phosphites with different NMR spectra, when heated to 140°. This phenomenon cannot be explained by destructional or skeletal isomerization of the original compound since after distillation of the mixture, 1,3-propylene phosphite is uncovered in high yield. Likewise, no boat-chair conformational change can be assumed, since the emergence of the two different forms is not observed in solution of the phosphite in organic solvents or on mild warming. Consequently, the formation of the two phosphites can be attributed only to a conformational change at the phosphorus atom. A similar transformation was observed also with 1,3-butylene phosphite. A tertiary amine addition facilitated the transformation in this case, which is an indication of the prototropic character of the transformation.

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NIFANT'YEV, E. Ye., BORISENKO, A. A., NASONOVSKIY, I. S., and MATROSOV, Ye. I.,
Moscow State University imeni M. V. Lomonsov

"Stereochemistry of 1,3-Butylenephosphites"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 1, Jan-Feb 71, pp 121-123

Abstract: Stereochemical relationships between the isomers of 1,3-butylenephosphite were studied. One isomer -- the more stable -- was obtained by reacting 27.5 g dimethylphosphite, 22.5 g 1,3-butandiol and a small piece of sodium at 130°. When methanol stopped evolving, the product consisting of two isomers, was distilled at 110-130° in a 10^{-3} mm vacuum. After standing this material crystallized with a m.p. 52-52.5°. The labile isomer was obtained by reacting 16.4 g of the dimethylamide of 1,3-butylenephosphorous acid with acetic acid in absolute ether at 35°. Distillation of the material obtained gives a product with b.p. 97-97.5°/1 mm, n_D^{20} 1.4550, d_4^{20} 1.2600. The stable isomer is less soluble in organic solvents and has a lower R_f in thin layer chromatography on alumina. This more stable isomer is evidently associated to a larger extent than the labile material. Conversion of the
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NIFANT'YEV, E. Ye., et al, Doklady Akademii Nauk SSR, Vol 196, No 1, Jan-Feb 71, pp 121-123

labile isomer to the stable one is not a phenomenon of boat-chair interconversions; these isomers differ by the orientation of their substituents in relationship to the chair skeleton.

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USSR

UDC: 533.72

ADKHAMOV, A. A., Member, Academy of Sciences Tadzhik SSR, ASOYEV, A., and NASRIDDINOV, M.

"On Kinetic Theory of Transfer Phenomenon in Dense Multiatomic Gas"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, Vol 15, No 2, 1972, pp 19-23

Abstract: The kinetic theory of transfer for multiatomic gases applies to low-density gas only. The present work attempts to extend this theory to the case of dense multiatomic gases.

The derivation is based on generalized Boltsman-Enskog equations. It is assumed that the impact between molecules is nonelastic.

The transfer coefficients appearing in two equations are quite complex. By means of some simplifying assumptions they can be reduced to a form which is a modified Eiken correction for dense multiatomic gases.

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USSR

UDC 541.11

MASSONOV, P. M., Institute of Electrochemistry, USSR Academy of Sciences, Moscow

"The Gibbs and Tomson Adsorption Equations. II. Application of Gibbs' Equilibrium Principle to Adsorption, Chemical and Electrochemical Equilibria"

Moscow, Zhurnal Fizicheskoy Khimii, Vol XLV, No 11, Nov 1971, pp 2818-2823

Abstract: The author reformulates Gibbs' equilibrium principle so that it may be adaptable to adsorption, and chemical and electrochemical variations in state accompanied by release of heat and by variation in the phase volumes of a multicomponent, multiphase system not having zero values of surface stress on the contact areas. Details of application of the new formulation to chemical and electrochemical equilibriums are given.

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USSR

UDC 541.11

NASSONOV, P. M., Institute of Electrochemistry, USSR Academy of Sciences, Moscow

"The Gibbs and Tomson Adsorption Equations. I. Application of the Gibbs Equilibirum Principle to Adsorption Equilibriums in Real Monophasal, Multi-component Systems"

Moscow, Zhurnal Fizicheskoy Khimii, Vol XLV, No 11, Nov 1971, pp 2813-2817

Abstract: The adsorption formulas of J. V. GIBBS (1950) and J. J. TOMSON (1888), though both justified in practice, involve incompatible assumptions.

To resolve this inconsistency, the author applies the Gibbs equilibrium principle to adsorption equilibriums in the case of real, monophasal, multi-component systems, demonstrating that in the general case the chemical potentials of pure substances in solution and in the adsorbed state are by no means equal. The author derives an adsorption formula which allows for this difference, demonstrating that the Gibbs formula really represents only the partial case in which the difference in potential is not equal to zero, and does not depend on the chemical potentials of the dissolved and adsorbed components of the system. Applications of the new equation and the physical interpretation of mathematical terms used will be the subject of a future publication.

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USSR

UDC 533.6.013.42

KAMINER, A. A., NASTENKO, N. Ya., CHEMERIS, A. S.

"Experimental Study of the Effect of the Distance Between the Axes of the Centers of Gravity and Rigidity of the Profile on the Occurrence of Flexible Oscillations Applicable to Turbine Blades"

V sb. Rasseyaniye energii pri kolebaniyakh mekh. sistem (Energy Scattering Under Oscillations of Mechanical Systems — Collection of Works), Kiev, "Nauk. dumka", 1972, pp 317-320 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V374)

Translation: An experimental study of the effect of the distance between the axes of the center of gravity and the rigidity on the occurrence of flexing oscillations of profiles in an air flow were conducted. Both an isolated profile and a profile of a plane lattice were investigated. Special samples were made for this purpose, in each of the cross sections of which the axes of the foci, the centers of gravity, and the rigidity were combined at one point or shifted by a distance of the order of 0.25 of the chord length of the profile. In the course of the experiment the flexing rigidity of the oscillatory system (profile) and the frequency of its natural oscillations varied. The flexing (translational) oscillations of the profiles were excited

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KAMINER, A. A., et al, Rasseyaniye energii pri kolebaniyakh mekh. sistem, Kiev, "Nauk. dumka", 1972, pp 317-320

with an electromagnet. The effect of the indicated interaxial distance on the aerodynamic damping and excitation of oscillations was investigated as a function of the dynamic characteristics of the flow, Strouhal number, geometric characteristics of the profile and lattice, and the angle of attack. Limits for the change in these parameters and a method for establishing them are given. It is shown that the change in the interaxial distance between the centers of gravity and rigidity of the profiles has an inconsiderable effect on the course of flexing oscillations, which can be neglected. V. P. Vakhomchik.

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USSR

UDC 621.165.1:532.5.031

KAMINER, A. A., NASTENKO, N. Ya., (Kiev)

"The Problem of Modeling the Process of Flow Around the Blades of Turbines in Studying the Oscillations of Flat Blades"

Kiev, Problemy Prochnosti, No 8, 1972, pp 116-118.

Abstract: A device is suggested allowing the rotating blade wheel of a moving turbine blade set to be modeled. The device consists of a driven roller chain on two sprockets. The turbine blades being studied are mounted on the chain and moved past the stationary blade set by a motor which drives one of the two sprocket wheels. As the blades pass through the horizontal sectors where they are exposed to the moving fluid stream, they are maintained in straight-line motion by horizontal guides which support the chain.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

UDC 621.165.1:532.5.031

KAMINER, A. A., NASTENKO, N. Ye., Kiev

"Method of Studying Oscillations of Flat Turbine Machine Grids in High Temperature Gas Streams"

Kiev, Problemy Prochnosti, No 5, May, 1971, pp 111-113.

Abstract: An installation is described allowing the oscillations of turbine machine blades to be studied in subsonic, transsonic and supersonic high temperature air streams considering the parameters of the stream, oscillating system, aerodynamic characteristics of the profile and geometric parameters of the grid.

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USSR UDC 619:616.988.23:616.831.8-07:636.4

PRITULIN, P. I., Professor, PASHOV, T. V., Doctor of Veterinary Sciences, NASTENKO, V. D., Candidate of Veterinary Sciences, and MILANKO, A. Ya., Candidate of Biological Sciences, All Union Institute of Experimental Veterinary Medicine, and Poltava Zone Scientific Research Veterinary Station

"Respiratory Form of Aujeszky's Disease in Hogs"

Moscow, Veterinariya, No 8, Aug 70, pp 55-56

Abstract: Respiratory diseases are common among hogs; on some farms, they represent 50-90% of all swine diseases. To identify the pathogen of enzootic pneumonia, cultures inoculated with lung tissues from diseased hogs were cultured and a very active cytopathogenic virus was isolated. Rabbits, guinea pigs, and white mice infected with this virus, which was free of bacterial contamination, died within a short period. Hogs infected with the virus developed a chronic type of pneumonia which was defined as the respiratory form of Aujeszky's disease. The virus was neutralized in vitro with specific serum. Passive immunization with the serum had no prophylactic effect in rabbits, but protected guinea pigs from Aujeszky's disease after infection with the cultured virus. It is recommended that the respiratory form of Aujeszky's disease be taken into consideration in the differential diagnosis of enzootic viral pneumonias.
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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

UDC 629.7.036.3-226.001.4

KAMINER, A. A. and NASTENKO, N. YA.

"A Procedure for Investigating the Aerodynamic Damping of Turbomachine-Blade Oscillations in Airstreams, for Oscillations of Diverse Kinds"

Kiev, Rasseyaniye Energii pri Kolebaniyakh Mekh. Sistem--Sbornik (Energy Dispersion During Oscillations of Mechanical Systems--Collection of Works), Naukova Dumka, 1972, pp 298-304 (from Referativnyy Zhurnal--Aviatsionnye i Raketnyye Dvigateli, No 2, 1973, Abstract No 2.34.51, Resume)

Translation: In the Institute of Strength Problems, Academy of Sciences, Ukrainian SSR, systems have been developed which permit the conduct of an investigation of the aerodynamic damping of turbomachine blades within a wide range of oscillation frequencies and amplitudes. The use of these systems permits unique ascertainment of the influence, upon aerodynamic damping, of each of the factors that determine the process of turbomachine-blade oscillation in airstreams with the corresponding oscillation types, and also permits research on profiles of diverse configurations and dimensions at identical values of resonance-oscillation parameters and flow-regime parameters. The results of the investigation can be extended to the case of cantilever structures that have analogous geometric cross section dimensions, and which achieve resonance oscillations of the corresponding type with respect to any

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KAMINER, A. A. and NASTENKO, N. YA., Rasseyaniye Energii pri Kolebaniyakh Mekh. Sistem--Sbornik, 1972, pp 298-304

of the forms. A brief description is presented of the procedure and system for excitation of the oscillations. 4 figures. 6 references.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

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UDC: 621.373.029.7.001.5

DERYUGIN, I. A., ABDULLAYEV, R. A., KURASHOV, V. N., MIRZAYEV, A. T., and NASTICH, V. N.

"Investigating the Radiation Statistical Characteristics of a Laser Generating Several Axial Oscillations by the Photon Count Method"

Moscow, Radiotekhnika i elektronika, No 8, 1972, 1622-1627

Abstract: On the basis of the quasi-classical approximation, an analysis is made of experiments to determine the radiation statistics of a high-threshold laser, and the results are given of the measurements of photon-count statistics of several lasers operating in one transverse and several axial modes. A block diagram of the apparatus used for the photon-counting, in which an He-Ne laser operating at a wavelength of 6328 Å is the radiation source, is given together with curves for the probability distribution of the photon counts for each type of oscillation. On the same axes for each of these curves, both the Poisson and negative binomial distribution curves are plotted for the sake of comparison and show close agreement. Results of the experiments demonstrate the effectiveness of the photon count for studying the

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DERYUGIN, I. A., et al, Radiotekhnika i elektronika, No 8, 1972, pp 1622-1627

statistical characteristics of multiple frequency laser radiation.

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USSR

SHATALOVA, I. N., NASTOYASHCHAYA, N. N., ARTSIMOVICH, N. G., and SERGEL', O. S., Scientific Research Laboratory of Experimental Immunobiology, Academy of Medical Sciences USSR, Moscow

UDC 576.097

"Changes in the Peripheral Blood of Mice Upon Specific and Combined Suppression of Transplantation Immunity"

Moscow, Doklady Akademii Nauk SSSR, Vol 210, No 6, 1973, pp 1,450-1,452

Abstract: In experiments in which allotransplantation of skin patches to mice was performed, immunization of the recipients was carried out with unspecific immunosuppressors (antilymphocyte serum and cyclophosphamide) and with a specific antigen (viable cells of the spleen of donor mice). The antilymphocyte serum was obtained by immunizing rabbits with lymphoid cells of the mesenteric lymph nodes of mice. Suppression of the transplantation immunity with the non-specific immunosuppressors (cyclophosphamide alone or in combination with antilymphocyte serum) was accompanied as a rule by leukopenia and particularly lymphocytopenia. On the other hand, induction of immunological tolerance by applying the specific antigen or by treating the recipients with the antigen in combination with the unspecific

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SHATALOVA, I. N., et al., Doklady Akademii Nauk SSSR, Vol 210, No 6, 1973, pp 1,450-1,452

immunosuppressors resulted in a marked extension of the time of survival of the transplanted skin without significant changes in the composition of the blood.

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UDC 533.9.08

NASTOYASHCHIY, A. F.

"Problem of Thermonuclear Burning in a Limited Region"

Moscow, Atomnaya Energiya, Vol 32, No 1, Jan 72, pp 43-47

Abstract: The article discusses the question of the possibility of thermonuclear burning in a hot plasma whose density is close to solid-state. It is possible to attempt to prevent rapid scattering of the plasma by surrounding the latter with a massive sheath. The question then arises whether there can be thermal equilibrium of a plasma with walls, and under what conditions. The article considers only those necessary conditions under which steady states of a hot plasma are possible in principle. The three simplest plasma configurations are considered for this purpose; viz., an infinite flat layer, an infinitely long cylinder, and a sphere. It is shown that thermal equilibrium of a thermonuclear plasma with bounding walls is possibly only if the criterion $(n_0 d) \geq (n_0 d)_{cr}$ is fulfilled. Otherwise, the plasma rapidly cools. Two states of plasma thermal equilibrium are possible under

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NASTOYASHCHIY, A. F., Atomnaya Energiya, Vol 32, No 1, Jan 72, pp 43-47

$(n_0 d) \geq (n_0 d)_{cr}$ -- at low and high temperatures respectively. Thermal equilibrium of the plasma at low temperatures is unstable, and the least overheating leads to further heat-up of the plasma. The energy required to initiate a thermonuclear reaction can be lowered by raising the density of the thermonuclear substance and including a sufficiently strong magnetic field.

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USSR

UDC: 621.375.421

MASLAKOV, G. N., PUSHKAR', V. I., and NASTYUSHENOK, S. S.

"Some Selective Amplifier Circuits Using Field-Effect Transistors With Double-T RC Filters"

V sb. Vopr. uluchsheniya tekhn. parametrov vypryamit. i tranzist. priborov (Problems in the Improvement of Technical Parameters of Rectifiers and Transistorized Devices -- collection of works) Leningrad, 1970, pp 174-180 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3D27)

Translation: Selective amplifier circuits with a double-T bridge in the negative feedback circuit are studied for use in active filters. It is shown that it is possible to make them using field-effect transistors, thus achieving wide limits of control of the amplification factor. The maximum amplification factor is approximateli 100. Bibliography of five.

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USSR

UDC 547.341.791

PUDOVIK, A. N., KHUSAINOVA, N. G., and NASYBULLINA, Z. A., Kazan' State University

"Cycloaddition of Phenylazide to Propynylphosphonates and Propynylphospine Oxides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, pp 1683-1686

Abstract: Cycloadditions of phenylazide to O,O-dipropyl propynylphosphonate, diphenylpropynylphosphine oxide, diethylpropynylphosphine oxide and propynylphosphonic acid chloride occur smoothly in 20-30 hrs when heated to 105-110° in anhydrous toluene. The products are 4-phosphinyltriazoles-1,2,3 obtained in 47-60% yield.

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USSR UDC: [537.226+537.311.33]:[539.3+536.21+536.631+536.651]

NASYROV, A., AKHMEDZHANOV, F. R., and MUMINOVA, M. F.

"Investigating the Attenuation of Longitudinal Ultrasonic Waves in Gallium Arsenide and Indium Arsenide"

Tr. Samarkand. un-ta (Transactions of the Samarkand University) No. 201, 1971, pp 76-80 (from RZh-Fizika, No. 11, 1971, Abstract No. 11E790)

Translation: The velocity of propagation v_e and the frequency dependence of the attenuation factor $\alpha(f)$ of longitudinal ultrasonic waves in n-type GaAs and InAs are measured by the pulse method in the "pass" mode, in the frequency range of 30-220 MHz at room temperature. The mechanism of the $\alpha(f)$ is discussed, and v_e is determined, in the GaAs and InAs, to be $5.1 \cdot 10^5$ and $4.2 \cdot 10^5$ cm/s respectively.

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USSR

FILIPP, N. D., PATOKOV, L. F., NASYROV, A. M., and KHACHATUROV, A. I. UDC 621.371.332.4

"Scattering of UHF Waves by H_E Heterogeneities"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972 pp 518-522 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A350)

Translation: Scattering of UHF (at frequencies of 44 and 74 MHz) by H_E nonuniformities is analyzed over a range of 1300 km. Two types of amplitude-time dependences of H_E reflections are detected: flash and quasi-continuous. It is assumed that the flash signals are of meteoric origin. The nature of the quasi-continuous signals remains vague. Five illustrations, bibliography of four. A. L.

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1/2 023 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--SEARCH OF THE RAPID SPATIAL VARIATIONS OF THE INTENSITY OF THE OXYGEN GREEN LINE -U-

AUTHOR-(04)-KALCHAYEV, K.K., KOROBEYNIKOVA, M.P., NASYROV, G.A., KHAMIDULINA, V.G.

COUNTRY OF INFO--USSR

SOURCE--KAZDEL IV. POLYARNYYE SIYANIYA I SVECHENIYE NOCHNOGO NEBA, 1970, NR 18, PP 15-17

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, ATMOSPHERIC SCIENCES

TOPIC TAGS--OXYGEN, SPECTRAL LINE, EMISSION SPECTRUM, RADIATION SPECTRUM, RADIATION INTENSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0055 STEP NO--UR/3307/70/000/018/0015/0017

CIRC ACCESSION NO--AP0114451

UNCLASSIFIED

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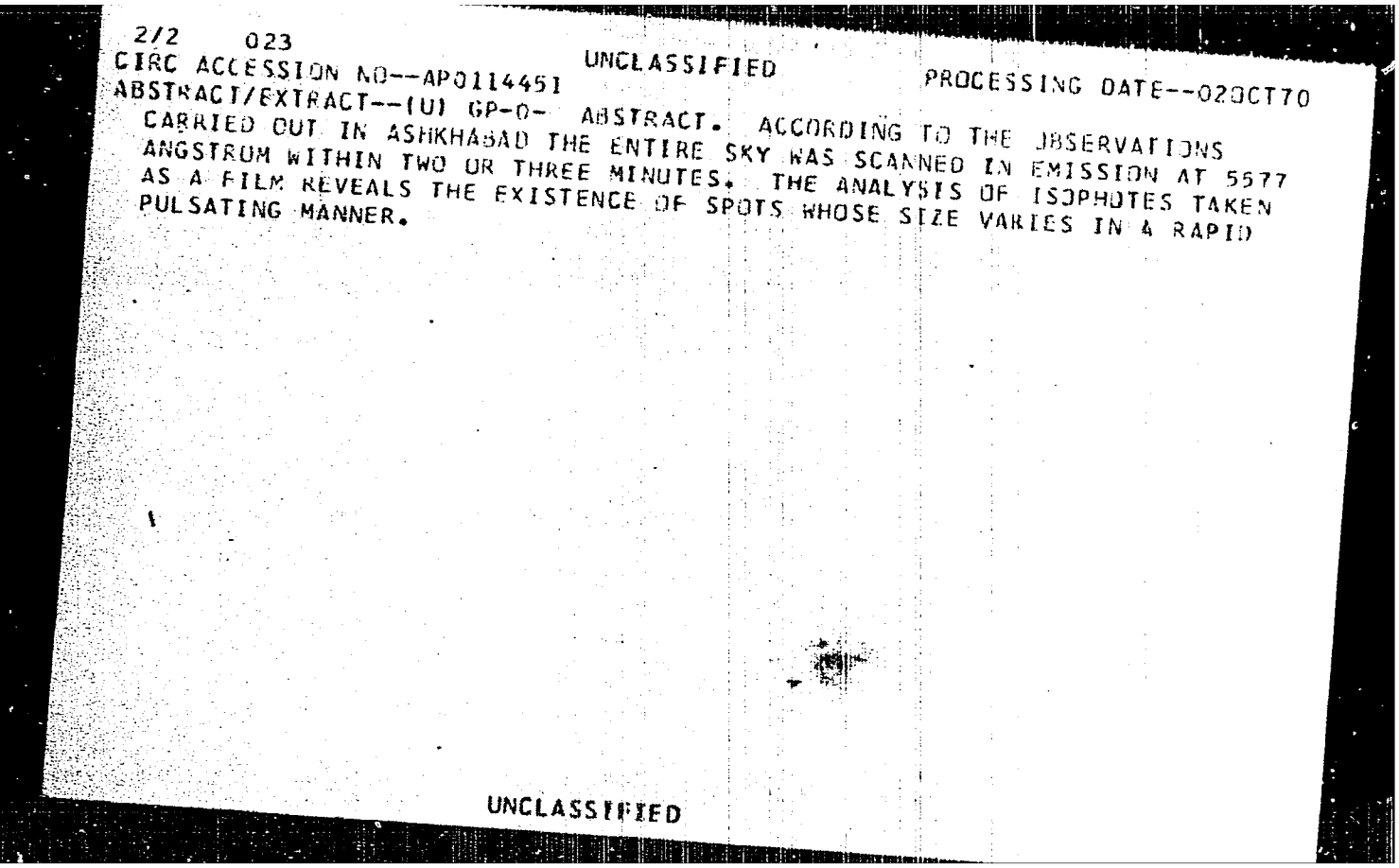

2/2 023 UNCLASSIFIED
CIRC ACCESSION NO--AP0114451 PROCESSING DATE--02OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACCORDING TO THE OBSERVATIONS CARRIED OUT IN ASHKHABAD THE ENTIRE SKY WAS SCANNED IN EMISSION AT 5577 ANGSTROM WITHIN TWO OR THREE MINUTES. THE ANALYSIS OF ISOPHOTES TAKEN AS A FILM REVEALS THE EXISTENCE OF SPOTS WHOSE SIZE VARIES IN A RAPID PULSATING MANNER.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

1/2 017 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--INTENSITY VARIATIONS AND DYNAMICAL CHARACTERISTICS OF THE SPATIAL PATCHES OF THE EMISSION LAMBDA 5577 ANGSTROM -U-

AUTHOR-(03)-KOROBEYNIKOVA, M.P., NASYROV, G.A., KHAMIDULINA, V.G.

COUNTRY OF INFO--USSR

SOURCE--RAZDEL IV, POLYARNYYE SIYANIYA, I SVECHENIYE NOCHNOGO NEBA, 1970, NR 18, PP 5-14

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS, ATMOSPHERIC SCIENCES

TOPIC TAGS--DIURNAL VARIATION, OXYGEN, LINE INTENSITY, SEASONAL VARIATION, MOON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0115 STEP NO--UR/3307/70/000/018/0005/0014

CIRC ACCESSION NO--AP0114511

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

2/2 017 UNCLASSIFIED

CIRC ACCESSION NO--AP0114511 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACCORDING TO THE OBSERVATIONS CARRIED OUT IN ASHKHABAD IT IS CHARACTERISTIC OF THE DAILY VARIATIONS IN THE INTENSITY OF GREEN OXYGEN LINE THAT THE MAXIMUM INTENSITY OCCURS AT 2 OR 3 A.M. FOLLOWED BY AN APPRECIABLE DROP BY 5 A.M. THE FREQUENCIES OF APPEARANCE OF LOGARITHM OF INTENSITY LAMBDA 5577 ANGSTROM AND THE CUBE ROOT OF THE INTENSITY ARE DISTRIBUTED IN A NORMAL WAY. THE INTENSITY IS SUBJECT TO SEASONAL VARIATIONS WITH TWO MAXIMUM VALUES IN JUNE AND OCTOBER, AND WITH A MINIMUM VALUE IN JANUARY. THE VARIATIONS IN INTENSITY LAMBDA 5577 ANGSTROM HAVE BEEN FOUND TO BE AFFECTED BY THE MOON. THE TIME OF THE MAXIMUM VALUE AFTER THE LUNAR MIDNIGHT CORRESPONDS TO 4 PRIMEK 10 PRIMEH, THE AMPLITUDE BEING 35 RAYLEIGHS. AN AVERAGE SIZE OF HETEROGENEITIES LAMBDA 5577 ANGSTROM WHICH ARE WITHIN THE PHOTOMETRE FIELD OF VISION, IS 100 KM. THE MAXIMUM SIZE BEING 500 KM, AND THE MINIMUM ONE 30 KM. AN AVERAGE SIZE OF HETEORGENEITY BEYOND THE PHOTOMETRE FIELD OF VISION IS 1000 KM.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR Rare Metals

MASYROV, I., Candidate of Chemical Sciences

"New Methods in the Metallurgy of Rare Metals"

Dushanbe, Kommunist Tadshikistana, 27 Sep 73, p 2

Translation: The twentieth century has become a century of the appearance of a new branch of industry, that of the metallurgy of rare metals. This means that alongside the traditional metals -- iron, copper, zinc, lead, and other, which have been known for a long time, a great many other metals have been developed which were formerly only of scientific interest. I refer to such metal as titanium, germanium, vanadium, molybdenum, tungsten, rhenium...

It was life itself and technological progress that compelled us to mine and isolate rate metals. Without rare metals such branches of modern technology as communications electronics, rocket production, semiconductor industry could not have been created. Nature, however, very jealously guards its riches, particularly when it comes to rare metals, whose content in the earth's crust is estimated in the thousandths and millionths fractions of a percent. Such metals are either highly scattered or are presently in such mineral form that special methods are required for their extraction and assimilation; and besides, for each metal, different, special methods

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

MASYROV, I., Kommunist Tadzhikistana, 27 Sep 73, p 2

must be used...

Special methods... It was to develop one such method which has been recognized as most promising, that Ivan Alekseyevich Glukhov, Doctor of Chemical Sciences, had devoted many years of research.

The mineral resources of our Republic [Tadzhikistan] abound in rare metal ores. It is therefore quite natural that the Laboratory of the Chemistry Of Rare and Scattered Elements of the Institute of Chemistry from the very first days of its creation has been engaged in developing new methods for the extraction of rare metals from mineral raw materials. In solving the problems facing the scientists, it was decided to completely abandon the known methods used during the 50-60 years of the existence of the metallurgy of rare metals, the so-called hydrometallurgical methods, which require complicated and combersome technology.

Hundreds and thousands of experiments, and many years of scientific research were required to enable Ivan Alekseyevich to declare one day that under laboratory conditons a new process has been developed -- a low-temperature chlorination of mineral raw materials, differing from all the existing methods by high selectivity, effectiveness, and low cost. Of great importance

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

MASYROV, I., Kommunist Tadzhikistana, 27 Sep 73, p 2

is the fact that this process is applicable to any low-quality raw material, and the commerical product obtained exhibits great purity.

Much could be said about the advantages of the new process. Here is one example.

The process developed by the workers of the laboratory was intended to be applied to tungsten-molybdenum raw materials. It was found that in a single operation both tungstenic and molybdenic high-puritycommercial products were being obtained. This permitted us to solve the complicated technological problem of the complete separation of tungsten and molybdenum, which is of extreme importance and which could not be solved by existing methods and in particular by hydrometallurgy.

The new process developed by Tadzhik chemists has won the enthusiastic support of specialists and has been received with great interest by the Ministry for Nonferrous Metallurgy USSR. However, its introduction into industry was greatly delayed, although about ten years ago I. A. Glukhov and co-workers has succeeded in carrying out the first stage of semi-industrial experiments at one of the enterprises of the country. It is true though, that the final part of the work could not be completed for a number of reasons, "mainly because of the bureaucratic order," as stated by the Professor.

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"That is why the Presidium of our Academy of Sciences has decided to carry out the final stage of the work here, in the Republic, within the walls of the Institute of Chemistry. For this very purpose a semi-industrial plant has been created at the Institute."

"The Main problem with which we had been and are being confronted is to obtained the technologico-economical indices of the new process, and to verify the effectiveness of the chain of apparatus involved im the whole scheme," continues Ivan Alekseyevich. "Certainly not all was flawless. After each try we were perfecting this or that point, and were changing some parameters, in order to obtain the best variant. Experiments carried out convinclingly confirm that our process is by all indices highly productive, and is easily amenable to mechanization and automation, whereas its production, as shown by evaluations, is considerably cheaper, as compared with the cost price of the analogous commerical production of the existing enterprises."

At present the Institute is preparing a summary report for the Ministry for Nonferrous Metallurgy USSR, which carefully outlines the progress of the experiments. The Institute has well-substantiated recommendations for putting the new process into industrial operation...

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

NASYROV, I., Kommunist Tadzhikistana, 27 Sep 73, p 2

Ivan Alekseyevich mentions the names of many who in one way or another contributed and helped him in the creaction, assembly, and testing of the semi-industrial plant. These include his disciples and closest assistants, co-workers at the Laboraotry, Candidate of Chemical Sciences L. M. Shalukhina, Senior Engineer G. N. Podonitsyn, and Candidate of Chemical Sciences S. S. Yeliseyev. The latter made the greatest contribution to the theoretical part of the work. Incidentally, Sergey Yeliseyev has just submitted his doctoral thesis in which he presents the theoretical basis of processes taking place in the apparatus of the operation line.

There is no doubt that the "Glukhov Plant," as it is being called at the Institute, will give impetus to the establishment and development at the Institute of Chemistry of its own production base.

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USSR

UDC: 678.675:678.026:66.040.3:539.61

YEGORENKOV, N. I., NASYROV, I., and BELYY, V. A., Institute of Mechanics and Metallopolymer Systems of the Academy of Sciences of the Byelorussian SSR

"The Effect of Antioxidants on the Adhesive and Cohesive Properties of Polycaproamide Coatings"

Minsk, Doklady Akademii Nauk BSSR, Vol XVII, No 1, pp 43-46

Abstract: The authors study the effect of the percentage by content of the antioxidant, phenyl-beta-naphthylamine D, on the adhesion and microhardness of polycaproamide coatings which are obtained by the powder deposition method in air at various temperatures. It is shown that adhesion and microhardness vary symbatically with respect to changes in forming temperature and antioxidant content, while their dependence on antioxidant content is characterized by two maxima, i.e. maximum and maximum or by a single maximum. The latter is determined by the stage of oxidation which in the case of the coating is realized by means of a non-stabilized polymer. This is related to the processes associated with the destruction and structuring of micromolecules. It is shown that maximum adhesion is exhibited by coatings made from stabilized polycaproamide obtained at temperatures close to that required for the depolymerization of the polymer. Original article: two figures and 15 bibliographic entries.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

UDC 681.2.087.92

NIGMATULLIN, R. SH., and NASYROV, I. K.

"On the Theory of Two-Terminal Integrating Network"

Tr. Kazan. aviats. in-ta (Works of the Kazan' Aviation Institute), 1971, Vyp 137, pp 65-69 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 7, Jul 72, Abstract No 7A96)

Translation: A theoretical investigation is made of a chemotronic two-terminal integrating network with a three-ion electrolyte. The effect which the volumetric resistance and the geometry of the diffusion barrier have on the integration characteristics is considered. It is shown that the dynamic integration range has a lower bound due to the fact that relaxation processes in the diffusion barrier take place more slowly than in the integral section. One illustration, bibliography of four titles.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

1/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--BROMO SUBSTITUTED 1, THIAINDANS -U-

AUTHOR-(03)-NUMANOV, I.U., OZHALOLOV, S.S., NASYROV, I.M.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK TADZH. SSR 1970, 13(4), 31-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BROMINATED ORGANIC COMPOUND, HETEROCYCLIC SULFUR COMPOUND, CATALYTIC ORGANIC SYNTHESIS, PROPIONIC ACID, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1101 STEP NO--UR/0425/70/013/004/0031/0034

CIRC ACCESSION NO--AT0124756

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

2/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AT0124756
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BROMINATION OF L-THIAINDAN AT 50-60DEGREES IN CCL SUB4 GAVE (FORMULAS SHOWN ON MICROFICHE).
FACILITY: INST. KHIM., DUSHANBE, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

UDC: 681.3

BEKMURATOV, T. F., MUSAYEV, M. M., NASYROV, M. Sh., SHAMSIYEV, T. G.

"An Analog-Digital Computer System Based on the 'Dnepr' Computer and the MN-7"

V sb. Analogovaya i analogo-tsifr. vychisl. tekhn. (Analog and Analog--Digital Computer Technology--collection of works), vyp. 4, Moscow, "Sov. radio", 1971, pp 45-49 (from RZh-Kibernetika, No 9, Sep 71, Abstract no 9V552)

Translation: The paper describes an analog-digital computer system based on the "Dnepr" digital computer and two MN-7 analog computers. The structure used in the hybrid system enables automation of the processes of control and setting up structural schemes on the analog computers. Authors' abstract.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

UDC 582.285(575.43)

NASYROV, O., Turkmen State Pedagogical Institute

"Some Rust Fungi of the Tashauz Oasis"

Ashkhabad, Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Biologicheskikh Nau, No 5, 1971, pp 79-82

Abstract: An investigation of sample material collected in the Tashauz Oasis in 1965-1967 revealed the presence of 29 species of rust fungi belonging to the genera Melampsora, Uromyces, Puccinia, and Aecidium. Of these, 18 species are new for the Tashauz Oasis and one species is new for Turkmenia. Seven species are pathogenic to crops, with Uromyces striatus Schrot. being the most harmful. A list of the 29 species of rust fungi, with specification of the host plant and place and date of collection, is given.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

UDC 621.311.1.001.24

FAZYLOV, KH. F., Doctor of Technical Sciences, BRISKIN, I. L., NASYROV, T. KH., Engineers, Tashkent

"Algorithms for Calculating the Steady State Conditions of Large Electric Power Systems"

Moscow, Elektrichestvo, No 9, 1972, pp 11-14

Abstract: A study was made of algorithms for calculating large electric power systems based on division of the large system intosubsystems. When assigning the boundary conditions in the form of currents and power fluxes, inadequacy of the properties of the solutions of the equations of the steady state conditions of the subsystems and the system as a whole is detected. It is proposed that the boundary conditions be assigned in the form of an equivalent balancing junction, and the corresponding algorithm is proposed on the basis of the equations with the matrix of the junction resistances. The matrix derivation of the nonlinear junction voltage equations for use in the equivalent balancing junction method is also given.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

UDC 581.132

NASYROV, Yu. S., Corresponding Member, Academy of Sciences Tadzhik SSR, ABDURAKHMANOVA, Z. N., ERGASHEV, A., and ALIYEV, K., Institute of Plant Physiology and Biophysics, Academy of Sciences, Tadzhik SSR

"Mechanism of Action of High-Altitude Ultraviolet Radiation on the Development and Functional Activity of the Photosynthetic Apparatus"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, No 9, 1971, pp 53-60

Abstract: Ten-day-old etiolated pea seedlings were exposed to sunlight for 4 to 5 days, during which time measurements were made of the photosynthetic assimilation of $C^{14}O_2$ and content of chlorophyll, nucleic acids, and proteins in the subcellular structures. Appreciable amounts of chlorophyll did not form until 7 to 10 hours after exposure. There was a correlation between the formation of chlorophyll and assimilation of $C^{14}O_2$, which persisted for 20 hours, after which the pigment content stabilized while the assimilation of carbon continued to increase rapidly. Total RNA decreased sharply the first 10 to 20 hours and then increased. Light-dependent RNA synthesis in the chloroplasts was much more sensitive to ultraviolet radiation than RNA synthesis in the nuclei. The protein-synthesizing system of the chloroplasts was more sensitive than the other subcellular structures. The

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USSR

NASYROV, Yu. S., et al., Doklady Akademii Nauk Tadzhikskoy SSR, No 9, 1971, pp 53-60

incorporation of C^{14}-labeled leucine into the chloroplast proteins was sharply inhibited by ultraviolet during the first 10 to 30 hours of exposure of the etiolated seedlings. It was concluded that the molecular mechanism of action of high-altitude radiation on photosynthesis is controlled by the inhibition of light-inducible transcription of RNA into DNA of the plastids and suppression of protein systhesis.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

UDC 575.24

USMANOV, P. D., STARTSEV, G. A., SHABALOV, V. V., and MASHEDOV, Yu. S., Institute of the Physiology and Biophysics of Plants, Academy of Sciences Tadzhik SSR, Dushanbe

"Mutagenic Effects of Laser Irradiation of Seeds of Arabidopsis thaliana (L.) Heynh"

Moscow, Doklady Akademii Nauk SSSR, Vol 193, No 2, 1970, pp 455-457

Abstract: Since absorption of laser rays produces a release of heat and a high-intensity electrical field it was decided to investigate the possible mutations that may develop in plants after such irradiation. Air-dried seeds of Arabidopsis thaliana (L.) Heynh (Enkheim strain) were irradiated with modulated ($t = 6 \times 10^{-9}$ sec) and freely generated ($t = 5 \times 10^{-4}$ sec) ruby laser rays and planted in appropriate media. Both the percentage of germinating seeds and the size and viability of the sprouts were reduced. As a result of mutations in pigmentation, the plants acquired a pale green, yellow, or whitish color. Evidence suggests that these mutations were caused not only by the heat released, but also (and primarily) by nonlinear optical processes. Since 180 of the 760 irradiated plant families developed viable mutants, laser rays may be regarded as a new physical agent that can be used to produce mutations in Arabidopsis thaliana.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

1/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--TWO SYSTEMS OF PROTEIN SYNTHESIS DURING THE FORMATION OF PEA SEEDLING CHLOROPLASTS -U-

AUTHOR-(02)-NASYROV, YU.S., ALIYEV, K.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK TADZH. SSR 1970, 13(4), 50-2

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROTEIN SYNTHESIS, CHLOROPLAST, NUCLEUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605006/E10 STEP NO--UR/0425/70/013/004/0050/0052

CIRC ACCESSION NO--AT0139806

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

2/2 010 UNCLASSIFIED

CIRC ACCESSION NO--AT0139806 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RELATION BETWEEN THE PROTEIN SYNTHETIZING SYSTEMS OF THE NUCLEUS AND THE CHLOROPLAST DURING THE GROWTH OF ETIOLATED PEA SEEDLINGS WAS STUDIED. THE FORMATION OF THE PHOTOSYNTHETIC APP. IS CONTROLLED BY BOTH SYSTEMS. STRUCTURAL PROTEIN SYNTHESIS DURING THE FORMATION OF CHLOROPLASTS INVOLVES CYTOPLASMIC 30 S RIBOSOMES INSENSITIVE TO CHLORAMPHENICOL. AFTER COMPLETION OF THE LAMELLAR ORGANIZATION OF CHLOROPLASTS THE SYNTHESIS OF STRUCTURAL PROTEINS INVOLVES 70 S RIBOSOMES AND IS INHIBITED BY ANTIBIOTICS.

FACILITY: INST. FIZIOL. BIOFIZ. RAST., DUSHANBE, USSR.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DETERMINATION OF THE INTRINSIC VISCOSITY OF POLYETHYLENE SOLUTIONS -U-

AUTHOR-(05)-RYAZANTSEV, V.I., KONDRATYEV, A.A., SISIN, N.F., NASYROVA, Z.M., BOGATYKH, K.F.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 954-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--INTRINSIC VISCOSITY, POLYETHYLENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0663 STEP NO--UR/0459/70/012/004/0954/0956

CIRC ACCESSION NO--AP0124335
UNCLASSIFIED

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

2/2 012 UNCLASSIFIED PROCESSING DATE--30OCT7(

CIRC ACCESSION NO--AP0124335

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE 0.4-2.3 DL-G RANGE THE REDUCED VISCOSITY (N-C) OF POLYETHYLENE (I) SOLNS. IN P EXLENE CHANGES LINERALY WITH I CONCN. (C); THE HUGGINS CONSTS WAS 0.62.

FACILITY: UFIM. NEFT. INST., UFA, USSR.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

UDC 621.438:536

KLENIN, YU. P., NATALEVICH, A. S., TIKHONOV, N. T.

"Comparison of the Characteristics of Radial and Radial-Axial Centripetal Microturbines"

Tr. Kuybyshev aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, No. 45, pp 366-377 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 4, Apr 72, Abstract No 4.34.73)

Translation: Problems of determining the regions of the regime parameters $(\pi\ U_1/\Sigma c_{ad},\ \rho)$ in which the application of radial or radial-axial microturbines is economically feasible are discussed. It is shown that the basic criterion for comparing the economy of these microturbines is the ratio of the power at the periphery of the wheel to the flow of gas Nu/G. Computational relationships were obtained in relative parameters for analyzing the effect of regime parameters on the basic geometric relationships of the turbines and establishing the regions for their suitable application. 6 ill., 1 ref. Resume.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR

UDC 631.547.04+634.836.73

NATAL'INA, O. B., SVETOV, V. G., and GETALENKO, G. G., Kuban' Agricultur l Institute

"Aftereffect of Chlorocholine Chloride on Grape Plants"

Moscow, Khimiya, v Sel'skom Khozyaystve, Vol 10, No 9, (119), 1973, pp 59-61

Abstract: The growth of grape vines is inhibited as late as two years after the application of chlorocholine chloride [CCC]. Depending on the concentration of the solution and the frequency of application, the increase in vine growth dropped by 15-30%. This however did not depress formation and development of grape racemes: on the second year after application of CCC it was 20-46% higher than on the controls and on the third year after application -- 18-27% higher. The actual yield of the grape was 10-60% higher, accompanied by a lower incidence of rot.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202130010-0

USSR UDC 631.547.04:632.4:634.8

NATAL'INA, O. B., professor, and SVETOV, V. G., Kuban, Agricultural Institute

"The Effectiveness of Chlorocholine Chloride Against Gray Mold of Grapes"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 9 (107), 1972, pp 34-36

Abstract: The experiment tested the effect of CCC on the cause of gray mold and on the growth of vineyards, by application of the chemical in concentrations ranging from 1.0% to 5.0% to grapes of the Aligot variety, in July of 1970 and 1971. The application was 1.5-2.0 ml per bunch of grapes. The development of the disease, measured at the time of harvest, was found to be significantly less in 1970; the following year plants treated with 1/5% CCC had somewhat more gray mold because the bunches were closer to the ground. To determine the chemical's effect on grapevine growth, a field test was conducted using 1600 liters per hectare of various concentrations. Higher concentrations of CCC proved to be more effective in controlling gray mold, of which there was from 25-50% less than on the untreated control grapes. Some insignificant foliage damage occurred only in the variations which included two applications. Further it was observed that while CCC seems to have retarded growth, it had no significant effect on blossoming or on the

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NATAL'INA, O. B., and SVETOV, V. G., Khimiya v Sel'skom Khozyaystve, Vol 10, No 9(107), 1972, pp 34-36

eventual harvest. The highest yield came from grapes which had . had two applications of 1.5% CCC.

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LEBEDEV, V. B. and NATAL'INA, O. B.

"Susceptibility of Spring Wheat Varieties to Brown Leaf Rust Under Irrigation Conditions"

Moscow, Selektsiya i Semenovodstvo, No 1, 1971, pp 69-70

Abstract: The resistance of 22 spring wheat varieties (including five Canadian) to brown leaf rust (a major disease of wheat in the southeastern USSR) was studied in field experiments in 1967, a year of abnormally high temperatures and dry summer, and 1968, a year of more rainfall than usual. In both years half of the plants were watered while the other half were not. It was found that the plants on the irrigated plots in both years were more severely affected than controls in all the growth stages. Two new hard wheat varieties (Saratovskaya 40 and Khar'kovskaya 51) displayed considerable resistance and two of the Canadian wheats (Lee and Sa 4543) remained entirely immune to the disease.

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